



# California Bioenergy Action Plan

***Regional Forum on Biofuels  
Fresno, California  
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Commissioner and Chair  
Bioenergy Interagency Working Group***



# Strategic Value of Bioenergy

- **California has large, diverse and untapped biomass resources which can support greater use in electric power, fuels and chemicals.**
- **Biomass is an energy resource capable of achieving state petroleum reduction, climate change, renewable energy and environmental goals.**
- **Use of biomass for energy production can address California's waste disposal and environmental problems, while creating local jobs.**
- **Other public benefits include improving forest health and human and animal health, while avoiding catastrophic wildfires.**



# Bioenergy Interagency Working Group

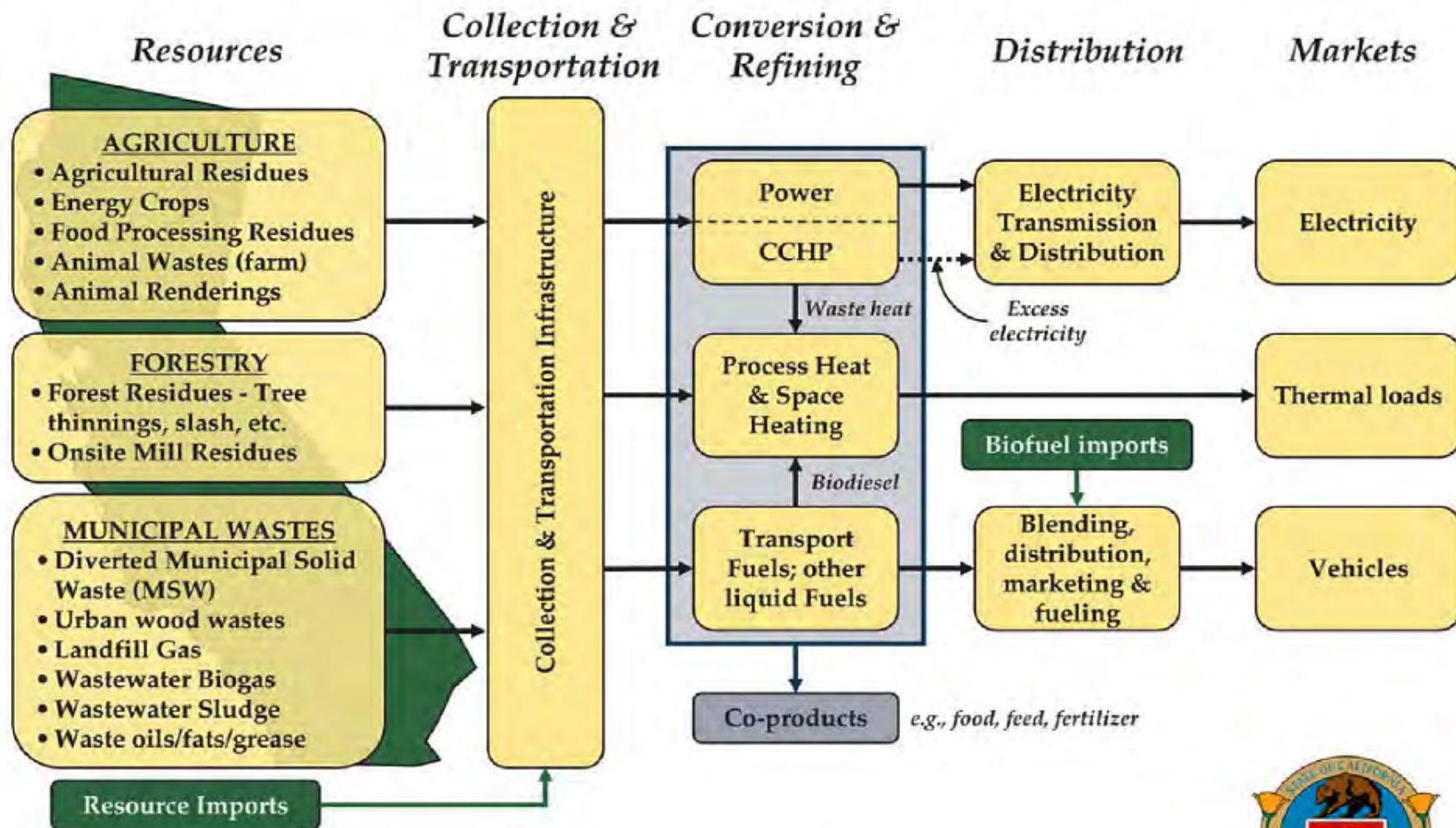
- **August 2005: Governor Schwarzenegger directed the Bioenergy Interagency Working Group to develop a comprehensive state policy for bioenergy**
  
- **Member agencies include:**
  - **Air Resources Board**
  - **California Energy Commission**
  - **California Environmental Protection Agency**
  - **California Resources Agency**
  - **Department of Food and Agriculture**
  - **Department of Forestry and Fire Protection**
  - **Department of General Services**
  - **Integrated Waste Management Board**
  - **Public Utilities Commission**
  - **State Water Resources Control Board**



# Working Group Policy Objectives

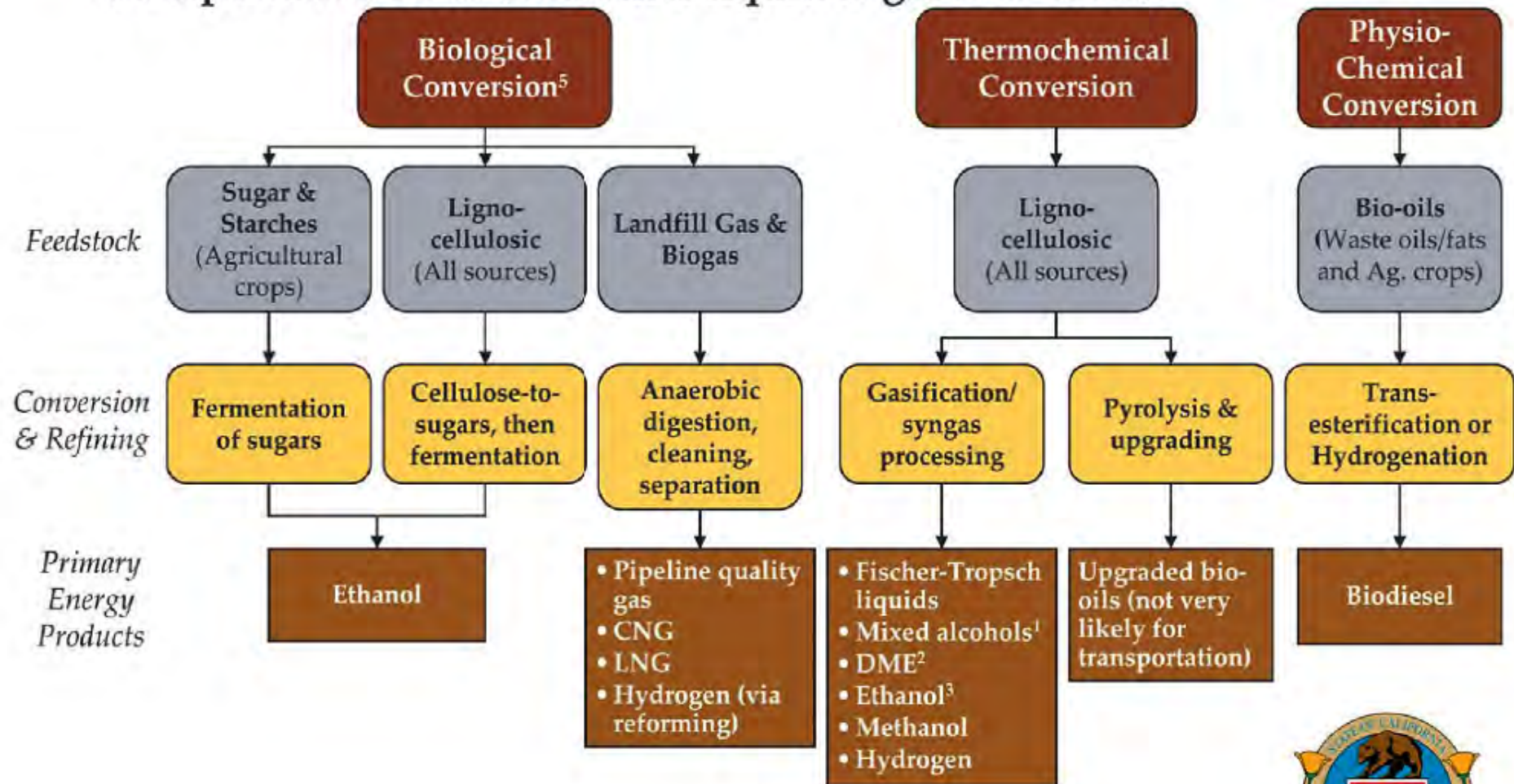
- **Maximize the contributions of bioenergy toward achieving the state's petroleum reduction, climate change, renewable energy, and environmental goals.**
- **Establish California as a market leader in technology innovation, sustainable biomass development, and market development for bio-based products.**
- **Coordinate research, development, demonstration, and commercialization efforts across federal and state agencies.**
- **Align existing regulatory requirements to encourage production and use of California's biomass resources.**
- **Facilitate market entry for new applications of bioenergy including electricity, biogas, and biofuels.**

The focus of this analysis was on power and fuels.





Using the four major feedstocks there are multiple pathways to create transportation fuels (and other liquid & gaseous fuels).





# Objective of the Bioenergy Plan – Turning Policy into Action

The Action Plan is designed to translate overarching policy objectives into specific actions for bioenergy.

Overarching State Policy Objectives*	Objectives for Bioenergy Plan	Supporting Actions
1. Reduce year 2010 CA emissions of GHG to 2000 levels	1. Create a positive environment for bioenergy; establish biopower and biofuels targets	• Administrative
2. Achieve maximum feasible reduction of GHGs from autos	2. Position CA as a leader in developing & deploying effective new technologies	• Legislative
3. Increase use of non-petroleum based transportation fuels to 20% by 2020, 30% by 2030	3. Remove existing regulatory and market barriers; recognize full value of bioenergy	• Regulatory
4. Generate 20% of electricity from renewable resources by 2010, 33% by 2020	4. Promote public awareness	



# Bioenergy Plan Elements » Challenges and Impediments

Despite the benefits, bioenergy must overcome a range of challenges and impediments to further development.

Policy/Regulatory	Market	Technical
<ul style="list-style-type: none"><li>• Fragmented state-level policies that do not recognize the full benefits of bioenergy</li><li>• Non-optimal state and federal financial incentives</li><li>• Complex and time-consuming permitting process</li><li>• Environmental justice concerns</li></ul>	<ul style="list-style-type: none"><li>• Cost of harvesting, collecting and delivering feedstock</li><li>• Capital market issues (risk vs. return)</li><li>• New distribution and end use infrastructure for certain biofuels</li><li>• Need for better public perception</li><li>• Need for cross-industry collaboration</li></ul>	<ul style="list-style-type: none"><li>• Cost competitiveness of existing technology (including impacts of incentives)</li><li>• Need to commercialize new technology</li><li>• Inconsistent feedstock quality</li></ul>





# Bioenergy Plan Status

- **3/31/06: Working Group delivered Recommendations for a Bioenergy Plan for California to Governor**
- **4/25/06: Governor Schwarzenegger issued Executive Order S-06-06**
- **May 2006: Working Group to release detailed Bioenergy Action Plan for California, specifying the actions and timelines they have agreed to take to implement the Executive Order**
- **December 2006: Energy Commission target for adoption of alternative transportation fuels report**



# **Gov. Schwarzenegger's Executive Order S-06-06**

- **Established targets to increase in-state production and use of bioenergy, including ethanol and bio-diesel fuels made from renewable resources:**
  - **For biofuels, the state shall produce a minimum of 20 percent of its biofuels within California by 2010, 40 percent by 2020, and 75 percent by 2050**
  - **For biomass for electricity, the state meet a 20 percent target within the established state goals for renewable generation for 2010 and 2020**



# Executive Order S-06-06

(continued)

- **Directed the Resources Agency and the Energy Commission to coordinate work among state agencies to promote the use of biomass resources, including:**
  - **continue the work of the Bioenergy Interagency Working Group, chaired by the Energy Commission**
  - **identify and secure federal and state funding for research, development and demonstration projects to advance the use of biomass resources for electricity generation and biofuels for transportation**
- **Directed the Energy Commission to report through its biennial *Integrated Energy Policy Report* on progress made in achieving sustainable biomass development in California**



# **Executive Order S-06-06**

**(continued)**

- **Urged the Air Resources Board to consider as part of its rulemaking on the predictive model the most flexible possible use of biofuels, while preserving the full environmental benefits of California's Reformulated Gasoline Programs**
- **Requested the Public Utilities Commission to initiate a new proceeding or build upon an existing proceeding to encourage sustainable use of biomass and other renewable resources by the state's investor-owned utilities**



# **Executive Order S-06-06**

## **Next steps**

- **Develop a detailed action plan that includes specific actions and timelines for individual and joint agency actions to implement the executive order**
- **The action plan will be released soon**
- **Efforts will feed into development of the AB 1007 Alternative Transportation Fuels Plan in December 2006**





# Additional information

**The Energy Commission's web site has extensive information on the ongoing bioenergy work in California at:**

**[http://www.energy.ca.gov/bioenergy\\_action\\_plan](http://www.energy.ca.gov/bioenergy_action_plan)**